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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/266,813	03/12/1999	HIROKO SATOH	P63431USO	6268

7590 02/28/2003
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EXAMINER

ZHOU, SHUBO

ART UNIT PAPER NUMBER

1631

DATE MAILED: 02/28/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/266,813

Applicant(s)

SATO ET AL.

Examiner

Shubo "Joe" Zhou

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 3-5, 14 and 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Applicant's amendment and request for reconsideration in Paper #19, filed on 10/28/02, is acknowledged and the amendments entered.

Applicant's arguments in response to the previous Office Action, mailed 7/2/02, have been fully considered. The following rejections and/or objections are either reiterated from the previous Office actions, or newly applied, and constitute the complete set presently being applied to the instant application. Rejections and/or objections from previous Office actions not reiterated herein are hereby withdrawn.

Claims 1-14, 16-18, and 20 are currently pending and under consideration.

Drawings

It is noted that a PTO-948 was mailed with Paper No. 8 on 6/5/01. Applicants are reminded that the required timing for the correction of drawings has changed. See 37 CFR 1.85(a). Applicants are required to submit acceptable corrected drawings within the time period set in this Office action. Failure to take corrective action within the set period will result in **ABANDONMENT** of the application.

Fig. 1(a), Fig. 1(b), Fig. 1(c), Fig. 1(d), and Fig. 1(e) are referred to in the specification. See page 9. However, there are no such figures in the drawings provided on 3/12/99. Corrections are requested.

Claim Objections

Claims 3-5, 14, and 16-18 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claims in proper dependent form, or rewrite the claims in independent form.

The objections are reiterated from the previous Office action and maintained for reasons of record. Applicants fail to address the objections in the response.

Claim Rejections-35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14, 16-18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. (J. Med. Chem, 1994) in view of Satoh et al. (J. Chem. Inf. Comput. Sci. 1998, 38, 210-219).

As set forth in the Office action, mailed on 6/5/01, page 8, Jain et al. explicitly describes a method, Compass, using molecular surface representation of a molecule's three dimensional structure for predicting the biological activities of the molecule. See Abstract. In addition, Jain et al. describes selecting "sampling points" on or near the surface of the molecule for deriving feature values such as steric and polar features (hydrogen bond donor/acceptor features). See pages 2316 and 2318. These sampling points on the surface are considered equivalents to the probe points of the instant claims. These features such as the steric features consist of the distance from these points to the

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van der Waals surface of the molecule, thus suggesting van der Waals energies, and steric factor of the instant claims. The polar features concern bonding energies which are thus encompassing electrostatic energies, thus suggesting the consideration of electrostatic energies of the molecular surface as in the instant claims. Jain et al. also uses neural network map for molecular activity prediction. It is noted that since Compass is used to predict, as an example in Jain et al., the activity of a ligand molecule binding to a receptor (see page 2321, Results), this binding to a receptor is considered a reaction characteristic of the ligand molecule.

Jain et al. does not explicitly disclose building a reaction map and use thereof for predicting a reaction characteristic of the molecule.

Satoh et al. discloses a method of building a reaction map of molecules and using a neural network to classify the reactions of molecules. See pages 211 and 213. Satoh et al. states that "the constructed reaction map will be employed for solving problems in computer-assisted reaction prediction and synthesis design". See page 210, right column. An ordinary skill in the art would have been motivated by Satoh et al. to use the reaction map to modify and combine with the teachings of Jain et al. for predicting reaction characteristics of molecules.

Conclusion

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703) 308-4242 or (703)305-3014.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to:

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Shubo "Joe" Zhou, Ph.D., whose telephone number is (703) 605-1158. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (703) 308-4028.

Any inquiry of a general nature or relating to the status of this application should be directed to Patent Analyst Tina Plunkett whose telephone number is (703)-305-3524, or to the Technical Center receptionist whose telephone number is (703) 308-0196.

S. "Joe" Zhou, Ph.D. 

Patent Examiner



MICHAEL P. WOODWARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600